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First Named Inventor	Patrick W. Bixenman
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Examiner Name	Tsay, Frank
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ENCLOSURES (Check all that apply)

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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	VAN SOMEREN, PC		
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Printed name	Robert A. Van Someren		
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Patrick W. Bixenman

Serial No.: 10/710,833

Filed: August 5, 2004

For: A Conduit Having a Cable Therein

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Group Art Unit: 3672

Examiner: Tsay, Frank

Atty Docket: 68.0414

Assistant Commissioner
for Patents
Washington, D.C. 20231

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Robert A. Van Someren

Sir:

SUPPLEMENTAL APPEAL BRIEF PURSUANT TO 37 C.F.R. §§ 41.31 AND 41.37

This Supplemental Appeal Brief is filed in response to the Notification of Non-Compliant Appeal Brief to supplement the September 28, 2007 Appeal Brief filed in furtherance to the Notice of Appeal mailed on August 1, 2007 and received by the Patent Office on August 6, 2007. The Supplemental Appeal Brief corrects an omission in the Status of Claims paragraph of the September 28, 2007 Appeal Brief.

1. **REAL PARTY IN INTEREST**

The real party in interest is Schlumberger Technology Corporation, the Assignee of the above-referenced application by virtue of the Assignment recorded at reel 014960, frame 0125.

2. **RELATED APPEALS AND INTERFERENCES**

Appellants are unaware of any other appeals or interferences related to this Appeal. The undersigned is Appellant's legal representative in this Appeal. Schlumberger Technology Corporation, the Assignee of the above-referenced application as evidenced by the documents listed above, will be directly affected by the Board's decision in the pending appeal.

3. **STATUS OF CLAIMS**

Claims 1-16 and 25-32 stand finally rejected by the Examiner as noted in the Office Action dated April 9, 2007. Claims 17-24 were previously withdrawn from consideration as directed to a nonelected species. The rejection of claims 1-16 and 25-32 is appealed.

4. **STATUS OF AMENDMENTS**

The February 12, 2007 Amendment, submitted prior to the Examiner's Final Rejection mailed April 9, 2007, was entered by the Examiner.

5. **SUMMARY OF THE CLAIMED SUBJECT MATTER**

a.) Independent Claim 1

Independent claim 1 is directed to a device for use in a wellbore comprising a conduit 102, 202, 302 and a cable 100, 200, 300 inserted into the conduit. The cable 100, 200, 300 is placed in the conduit 102, 202, 302 in a manner creating cable buckles that contact an interior surface of the conduit 102, 202, 302 at a plurality of locations substantially along the entire length of the conduit 102, 202, 302. The placement of the cable into the conduit is done in a manner providing controlled, uniform buckling of the cable 100, 200, 300 so that the cable is uniformly supported along the length of the conduit. (See page 7, line 20, through page 8, line 21, paragraphs 029, 030, 031). The uniform buckling and uniform support is achieved by placing the cable 100, 200, 300 into conduit 102, 202, 302 at a surface location prior to deployment of the conduit into the wellbore. The uniform buckling can be achieved by several techniques, including pumping techniques (see page 7, lines 26-29, paragraphs 029), unspooling techniques

(see page 8, lines 9-13, paragraphs 030), oscillating reel techniques (see page 8, lines 23-25, paragraph 032), and manufacturing techniques (see page 9, lines 3-7, paragraphs 033).

b.) Independent Claim 10

Independent claim 10 is directed to an electric submersible pumping system comprising a length of conduit which can be coiled tubing 602. The conduit/coiled tubing 602 supports a pump and an electric motor of electric submersible pump 660. An electric cable 600 is disposed within conduit/coiled tubing 602 to supply power to electric submersible pump 660. (See page 9, line 24, through page 10, line 3, paragraph 035). The electric cable 600 is arranged in an arcuate path along substantially the entire length of conduit/coiled tubing 602 so that the electric cable buckles and contacts the conduit/coiled tubing 602 at a plurality of uniformly spaced locations to prevent longitudinal movement of electric cable 600 within the conduit/coiled tubing 602. The plurality of locations is achieved by placing the electric cable into the conduit at a surface location. (See page 10, lines 8-13, paragraph 035; see also page 7, line 20, through page 8, line 21, paragraphs 029, 030, 031).

c.) Independent Claim 14

Independent claim 14 is directed to a method of installing a cable into a conduit while located above the wellhead or, in other words, at a surface location. Initially a first length of cable 100, 200, 300 is inserted into a length of conduit 102, 202, 302 that is of substantially the same length as the first length of cable. Buckling of the cable is then created by inserting a second length of the cable 100, 200, 300 into the same length of conduit 102, 202, 302. The cable 100, 200, 300 buckles at a plurality of locations along substantially the entire length of the conduit 102, 202, 302 to prevent longitudinal movement of the cable within the conduit. The method further comprises controlling the uniform buckling to uniformly support the cable 100, 200, 300 along the length of the conduit 102, 202, 302. (See page 7, line 20, through page 8, line 21, paragraphs 029, 030, 031).

d.) Independent Claim 25

Independent claim 25 is directed to another embodiment of installing a cable into a conduit. In this method, the uniform buckling of the internal cable is achieved during fabrication of the conduit. Initially, a strip of metal 503 is rolled to create a length of tubular material 502. A length of cable 500 is then inserted into tubular material 502 in a manner that buckles the cable 500 to create uniform contacts along the interior surface of the tubular material 502, thereby preventing longitudinal movement of the cable 500 within tubular material 502. The uniform support is provided by controlling the positioning of the plurality of contact locations. Once uniform buckling of the cable 500 within the tubular material 502 is achieved, the tubular material 502 is sealed to create a conduit having a uniformly buckled internal cable. (See page 9, lines 3-23, paragraphs 033, 034).

e.) Independent Claim 27

Independent claim 27 is directed to a method of installing a cable 100, 200, 300 into a conduit 102, 202, 302 prior to deploying the conduit into a well. A cable 100, 200, 300 having a greater length than the conduit 102, 202, 302 is initially inserted into the conduit. The longer cable 100, 200, 300 is distributed substantially evenly throughout the conduit. This allows the formation of uniform contacts between the cable 100, 200, 300 and the conduit 102, 202, 302 for uniform support of the cable within the conduit. (See page 7, line 20, through page 8, line 21, paragraphs 029, 030, 031).

f.) Independent Claim 32

Independent claim 32 is directed to a conduit having a uniformly supported internal cable. A cable 100, 200, 300, having a greater length than the conduit 102, 202, 302, is inserted into the conduit. The longer cable 100, 200, 300 is distributed substantially evenly throughout the conduit. This allows the formation of uniform contacts between the cable 100, 200, 300 and the

conduit 102, 202, 302 to uniformly support of the cable along the length of the conduit. (See page 7, line 20, through page 8, line 21, paragraphs 029, 030, 031).

6. **GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

- a.) Whether claims 1, 2, 4, 5, 8, 9, 14 and 25-32 are unpatentable under 35 U.S.C. § 102(b) as anticipated by the Moore reference, U.S. Patent No: 6,148,925.
- b.) Whether claim 3 is unpatentable under 35 U.S.C. § 103(a) as obvious over the Moore reference in view of the Denison et al. reference, U.S. Patent No: 4,095,865.
- c.) Whether claims 6, 7, 10, 12, 13, 15 and 16 are unpatentable under 35 U.S.C. § 103(a) as obvious over the Moore reference in view of the McHugh et al. reference, U.S. Patent No: 5,954,136.
- d.) Whether claim 11 is unpatentable under 35 U.S.C. § 103(a) as obvious over the Moore reference in view of the McHugh et al. reference and further in view of the Denison et al. reference.

7. **ARGUMENT**

a.) Rejection of claims 1, 2, 4, 5, 8, 9, 14 and 25-32 as unpatentable under 35 U.S.C. § 102(b) as anticipated by the Moore reference, U.S. Patent No: 6,148,925.

- Claims 1, 2, 4, 5, 8, 9, 14 and 25-32

Independent claims 1, 14, 25, 27, 32 and dependent claims 2, 4, 5, 8, 9, 26, 28-31 were improperly rejected as anticipated by the Moore reference. The reference fails to disclose elements of the subject claims.

In the BACKGROUND section of the present application, the Moore reference is listed as an example of conventional technology in which cable is delivered into a tubing while the tubing is suspended vertically in a well. A severe problem with this approach is the lack of uniform support for the cable, and it is this exact problem overcome by the present invention as set forth in the subject claims.

As further described in the BACKGROUND section of the present application, the gravity fed approach is embodied in US6148925 (the Moore reference) and US5954136. As explained by the Applicant with reference to US5954136, in a gravity fed approach:

"the cable is generally in tension when assembled at surface and some additional cable is fed into the conduit (e.g. coiled tubing) only after the conduit is suspended in the well. Such a procedure results in an assembly in which the bottom of the cable is heavily buckled while the upper portion of the cable is in tension. When additional cable is fed into the conduit, some buckling does occur at the upper end of the conduit, but this buckling may be generally loose. Additionally, at the mid-portion of the conduit, the cable may remain in tension and thus not buckle at all." (See patent application BACKGROUND, page 2, lines 11-17).

As a result, this conventional approach "does not produce a uniform buckling along the length of the assembly". The result is that vibration of the assembly during use can reduce the anchoring friction below a critical threshold and cause the cable to progressively settle until a stable, tighter helix is formed. This can cause pull-off of the cable connector or other types of failure. (See

BACKGROUND, page 2, paragraph 05). The DETAILED DESCRIPTION then proceeds to describe embodiments that overcome these problems associated with the Moore approach to structurally achieve "uniform" support as recited in the pending claims.

The approach and system described in the Moore reference does not achieve uniform support despite the language regarding contacts created by the helical conductor. Excerpts cannot be taken from the Moore reference out of context and used in a manner inconsistent with the teachings of the reference.

For example, in the April 9, 2007 Office Action, page 5, section 8, the Examiner stated: "...the portion of Moore to which applicant is referring, column 4, lines 65 through column 5, line 9 is not the portion of the reference on which the rejection was based. The section of Moore, column 3, line 62-column 4, line 54 clearly says that the wireline is feed into the well where the wireline is formed of coiled tubing 34 and a conductor 36 thus indicating that the conductor or cable was placed in the tubing prior to being inserted into the wellbore."

However, this assertion is incorrect. The passage cited by the Examiner does not indicate the conductor or cable was placed in the tubing prior to being inserted into the wellbore. In fact, the reference teaches just the opposite.

A similar assertion was again made in the June 26, 2007 Advisory Action, page 2, where the Examiner stated:

"As it appears that all of applicants arguments appear to be based on the applicants misunderstanding of what portion of the Moore reference the examiner is using in the rejection of the claims. The examiner agrees with applicants assessment with column 4, line 65 through column 5, line 9 but notes that this is a description of the disclosed invention of Moore. The examiner has based the rejection of the claims on prior art described in column 3, line 42-column 4, line 54 which does clearly teach the instant invention."

Applicant appreciates the Examiner's agreement with our previous assessment of the Moore system described at column 4, lines 65, through column 5, line 9 of the Moore reference. However, it should be emphasized that the characterization within the Moore reference at column 4, lines 65, through column 5, line 9 simply reemphasizes the conventional, gravity-fed, non-uniform support approach described at column 3, line 42, through column 4, line 54.

In the Moore reference (at column 3, lines 62-column 4, line 54), a wire line 10 is described as a conductive wire line formed of coiled tubing 34 and a conductor 36 that extends through the tubing 34. The conductor is deployed through the tubing 34 in a conventional, gravity-fed manner as gleaned from several descriptions found in this section of the Moore reference. For example, the reference states that "unless the conductor is straightened, the conductor cannot fall by gravity through the coiled tubing." (See column 4, lines 12-13). Subsequently, the reference states that the conductor "in addition to being straight, must also be able to travel through the helical bends in the tubing and bends or curves caused by any irregularities in the well" which clearly implies deployment of the conductor while the tubing is positioned vertically in the well. (See column 4, lines 21-25).

The Moore passage cited by the Applicant at column 4, line 65, through column 5, line 9, reemphasizes the conventional method by which the conductor 36 is placed into coiled tubing 34. According to the Moore reference, the method utilizes coiled tubing manufactured by conventional techniques "without any conductors in it." (See column 4, lines 64-66). The reference then further describes the method in which tubing is lowered into an underground well or other type of vertical passageway. A conductor is "then inserted into the tubing and allowed to fall by gravity through the tubing." (See column 5, lines 1-3). Accordingly, the characterization of the Moore reference in the April 9, 2007 Office Action is contrary to the actual teachings of the Moore reference.

As described in the BACKGROUND section of the present application, the approach taught by the Moore reference is not capable of providing "uniform" support as recited in the pending claims. The frictional engagement described in the Moore reference simply does not achieve uniform support. By virtue of the conventional initial deployment of tubing into the well and the subsequent deployment of the conductor, the Moore approach creates the very problems discussed in the BACKGROUND section of the present application that are overcome by the presently claimed invention.

By way of specific example, the Moore reference fails to describe or suggest numerous elements of the presently pending claims. The Moore reference does not disclose or suggest a cable inserted into a conduit, "wherein the cable is uniformly supported along the length of the conduit" as recited in independent claim 1. Similarly, the Moore reference does not disclose or suggest inserting a second length of cable into the length of conduit and "uniformly supporting the second length of cable along the length of the conduit via contact at the plurality of locations" as recited in independent claim 14. The Moore reference also fails to disclose or suggest rolling a strip of metal to create a tubular material, inserting a length of cable into the tubular material, and controlling the positioning of a plurality of contact locations "to provide uniform support of the length of cable along the tubular material when the tubular material is placed in a generally vertical orientation" as recited in independent claim 25. The Moore reference also fails to describe or suggest inserting a cable into a conduit "prior to deploying the conduit into a well" in combination with forming contact between the cable and the conduit "to support the cable in the conduit" as recited in independent claim 27. The Moore reference further fails to disclose or suggest a cable arranged in a conduit "to create contact between the cable and the conduit in a manner that provides uniform support of the cable along the length of the conduit" as recited in independent claim 32. Accordingly, the Moore reference fails to disclose or suggest elements of the subject claims.

Claims 2, 4, 5, 8, 9, 26 and 28-31 ultimately depend from one of the independent claims discussed above. These dependent claims are patentable over the cited reference for the reasons discussed above with respect to the independent claims as well as for additional, unique elements found in these dependent claims.

b.) Rejection of claim 3 as unpatentable under 35 U.S.C. § 103(a) as obvious over the Moore reference in view of the Denison et al. reference, U.S. Patent No: 4,095,865.

- Claim 3

Claim 3 was improperly rejected as obvious over the Moore reference in view of the Denison et al. reference. No *prima facie* case of obviousness has been established.

Claim 3 directly depends from independent claim 1 and is patentable over the Moore reference for the reasons discussed above with respect to independent claim 1 as well as for the additional, unique elements found in this dependent claim. The Denison et al. reference provides no additional disclosure that would obviate the deficiencies of the Moore reference.

The Denison et al. reference describes an insulated electrical conductor for use with pipe joints. The electrical conductor extends between insulated electrical connectors in the pipe joints and is insulated to isolate the conductor from fluid. (See column 3, lines 31-38, and column 6, lines 3-12). However, the Denison et al. reference does not disclose the uniform support recited in independent claim 1. Accordingly, no *prima facie* case of obviousness has been established and the rejection should be withdrawn.

c.) Rejection of claims 6, 7, 10, 12, 13, 15 and 16 as unpatentable under 35 U.S.C. § 103(a) as obvious over the Moore reference in view of the McHugh et al. reference, U.S. Patent No: 5,954,136.

- Claims 6, 7, 10, 12, 13, 15 and 16

Claims 6, 7, 10, 12, 13, 15 and 16 were improperly rejected as obvious over the Moore reference in view of the McHugh et al. reference. No *prima facie* case of obviousness has been established.

The McHugh reference is relied on as disclosing a tubing system to suspend and power an ESP within a wellbore. However, nothing in the McHugh reference supplements the disclosure of the Moore reference in a manner that would render obvious that which is claimed in independent claim 10. For example, the cited references, taken alone or in combination, do not disclose or suggest positioning an electric cable within a conduit such that the electric cable

contacts an interior surface of the conduit at a plurality of locations with "the plurality of locations being positioned to provide uniform support along the length of the conduit" as recited in independent claim 10.

Claims 6, 7, 12, 13, 15 and 16 ultimately depend from one of the independent claims 1, 10 and 14 discussed above. These dependent claims are patentable over the cited references for the reasons discussed above with respect to their corresponding independent claims as well as for additional, unique elements found in these dependent claims. The McHugh reference provides no additional disclosure that would obviate the deficiencies of the Moore reference.

d.) Rejection of claim 11 as unpatentable under 35 U.S.C. § 103(a) as obvious over the Moore reference in view of the McHugh et al. reference and further in view of the Denison et al. reference.

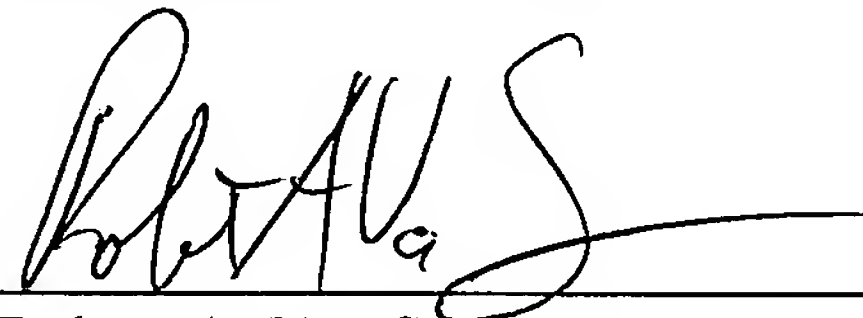
- Claim 11

Claim 11 was improperly rejected as obvious over the Moore reference in view of the Denison et al. reference. No *prima facie* case of obviousness has been established.

Claim 11 directly depends from independent claim 10 and is patentable over the Moore reference for the reasons discussed above with respect to independent claim 10 as well as for the additional, unique elements found in claim 11. The McHugh et al. and Denison et al. references provide no additional disclosure that would obviate the deficiencies of the Moore reference. Neither the McHugh et al. nor the Denison et al. references discloses or suggests electrical cable arranged within a conduit to create contacts at a plurality of locations so as to provide "uniform support" along the length of the conduit, as recited in independent claim 10 or its dependent claim 11. Accordingly, no *prima facie* case of obviousness has been established and the rejection should be withdrawn.

In view of the above remarks, Applicant respectfully submits the Examiner has provided no supportable position or evidence that any of the claims 1-16 and 25-32 are anticipated under 35 U.S.C. § 102(b) or obvious under 35 U.S.C. § 103(a). Accordingly, Applicant respectfully requests that the Board find claims 1-16 and 25-32 patentable over the art of record, withdraw all outstanding rejections, and allow claims 1-16 and 25-32.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Robert A. Van Someren', written over a horizontal line.

Date: October 31, 2007

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8. **CLAIMS APPENDIX**

1. A conduit for suspension in a wellbore, comprising:
a length of conduit; and
a cable inserted into the conduit, the cable having buckles, each buckle adapted to contact an interior surface of the conduit at a plurality of locations across substantially the entire length of conduit to prevent longitudinal movement of the cable within the conduit, wherein the cable is uniformly supported along the length of the conduit.
2. The conduit of claim 1, wherein the cable directly contacts the interior surface of the conduit.
3. The conduit of claim 1, wherein the conduit comprises a plurality of lengths of jointed tubing.
4. The conduit of claim 1, wherein the conduit comprises a length of coiled tubing.
5. The conduit of claim 1, wherein the cable is an electric power cable.
6. The conduit of claim 5, further comprising an electric submersible pumping system operatively connected to one end of the electric power cable.
7. The conduit of claim 6, wherein the electric submersible pumping system is connected to one end of the conduit.
8. The conduit of claim 1, wherein a compressive force on the cable is less than a total weight of the cable.
9. The conduit of claim 1, wherein the cable buckles to form a substantially uniform helix or sinusoid within substantially the entire length of conduit.

10. An electric submersible pumping system, comprising:
a length of conduit for suspension within a wellbore;
a pump operatively connected to an electric motor, with the pump connected to one end of the conduit; and
an electric cable disposed within the conduit, the electric cable defining an arcuate path along substantially the entire length of conduit such that the electric cable buckles and contacts an interior surface of the conduit at a plurality of locations to prevent longitudinal movement of the electric cable within the conduit, the plurality of locations being positioned to provide uniform support along the length of the conduit.
11. The electric submersible pumping system of claim 10, wherein the conduit comprises a plurality of lengths of jointed tubing.
12. The electric submersible pumping system of claim 10, wherein the conduit comprises a length of coiled tubing.
13. The electric submersible pumping system of claim 10, wherein the electric cable is disposed within the conduit at a surface location.
14. A method of installing a cable within a length of conduit at a location above the wellhead, comprising:
inserting a first length of cable into the length of conduit, the first length of cable being substantially equal to the length of conduit;
inserting a second length of cable into the length of conduit such that the cable buckles and contacts an interior surface of the conduit at a plurality of locations across substantially the entire length of conduit to prevent longitudinal movement of the cable within the conduit; and
uniformly supporting the second length of cable along the length of the conduit via contact at the plurality of locations.

15. The method of claim 14, further comprising:
connecting an electric submersible pumping system to one end of the conduit.
16. The method of claim 15, further comprising:
operatively connecting one end of the cable to an electric motor of the electric submersible pumping system.
25. A method of installing a cable within a length of conduit during fabrication of the conduit, comprising:
rolling a strip of metal to create a length of tubular material;
inserting a length of cable into the tubular material, wherein the cable buckles and contacts an interior surface of the tubular material at a plurality of locations across substantially the entire length of tubular material to prevent longitudinal movement of the cable within the tubular material;
controlling the positioning of the plurality of locations to provide uniform support of the length of cable along the tubular material when the tubular material is placed in a generally vertical orientation; and
sealing the tubular material to create a conduit having a buckled cable disposed therein.
26. The method of claim 25, wherein sealing the tubular member comprises:
welding and annealing the tubular material.
27. A method of installing a cable within a conduit, comprising:
inserting the cable into the conduit prior to deploying the conduit into a well, the cable having a length greater than a length of the conduit;
distributing the cable substantially evenly within the conduit; and
forming contact between the cable and the conduit to support the cable in the conduit.
28. The method of claim 27, wherein the cable buckles to define an arcuate path within the conduit and contacts an interior surface of the conduit at a plurality of locations across

substantially the entire length of conduit to prevent longitudinal movement of the cable within the conduit.

29. The method of claim 28, wherein a least a portion of the cable defines a helical path within the conduit.

30. The method of claim 27, wherein the difference between the length of cable and the length of conduit is substantially equal to or greater than 0.5 feet of cable per 1000 feet of conduit.

31. The method of claim 27, further comprising:
deploying the conduit in a well, wherein the distribution of cable within the conduit remains substantially even.

32. A conduit having a length, comprising:
a cable arranged within the conduit, the cable having a length that is greater than the length of the conduit, the cable being substantially evenly distributed within the conduit to create contact between the cable and the conduit in a manner that provides uniform support of the cable along the length of the conduit.

9. **EVIDENCE APPENDIX**

Not Applicable

10. **RELATED PROCEEDINGS APPENDIX**

Not Applicable